

Major Mines of Nevada 1994

Mineral Industries in Nevada's Economy

The Nevada Division of Minerals

1995

This is the sixth of an annual series of summary reports on major mines of Nevada. Sand and gravel operations are not included. Information on employment and production for the calendar year 1994 was provided by the individual mine operators. The Nevada Division of Minerals maintains a complete register of Nevada mines; for further information, contact them at 400 W. King, Suite 106, Carson City, Nevada 89710 or call (702) 687-5050.

THE NEVADA DEPARTMENT OF BUSINESS AND INDUSTRY
DIVISION OF MINERALS

The Nevada Division of Minerals is responsible for administering programs and activities to promote, advance, and protect mining and the development and production of petroleum and geothermal resources in Nevada. The division's mission is to administer programs and activities to further the responsible development and production of the state's mineral resources to benefit and promote the welfare of the people of the state. The Commission on Mineral Resources establishes mineral-related policy for the Nevada Division of Minerals which consists of the Bureau of Industrial Relations, Public Affairs and Administration, the Bureau of Regulation, and the Bureau of Abandoned Mine Lands.

The Bureau of Industrial Relations, Public Affairs and Administration is involved in a wide array of activities relating to mineral development. The bureau staff compiles annual data on all active mines in Nevada and maintains the state's mine registry. Information concerning mining operations and production is made available to the public through this yearly publication. The bureau also produces educational documents and materials concerning many aspects of the minerals industry, which are available upon request. Other responsibilities include participation in governmental activities affecting policies and laws concerning the minerals industry and resource development.

The Bureau of Regulation is responsible for permitting, inspecting, and monitoring all oil, gas, and geothermal drilling activities on both public and private lands in Nevada. Bureau staff also monitors production of oil, gas, and geothermal resources to insure proper management and conservation.

The Bureau of Abandoned Mine Lands provides for public safety through a program to identify and rank dangerous conditions which resulted from mining practices which took place at mines that are no longer operating, and to secure dangerous orphaned sites. The bureau has an ongoing program to educate the public to recognize and avoid those hazards. The bureau also administers the state's reclamation bond pool program.

Rose McKinney-James, *Director, Department of Business and Industry*

Russ Fields, *Administrator, Division of Minerals*

Paul Iverson, *Deputy Administrator*

Dong Driesner, *Chief, Bureau of Abandoned Mine Lands*

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Bill Durbin, *Resource Geologist*

John Snow, *Oil, Gas and Geothermal Field Inspector*

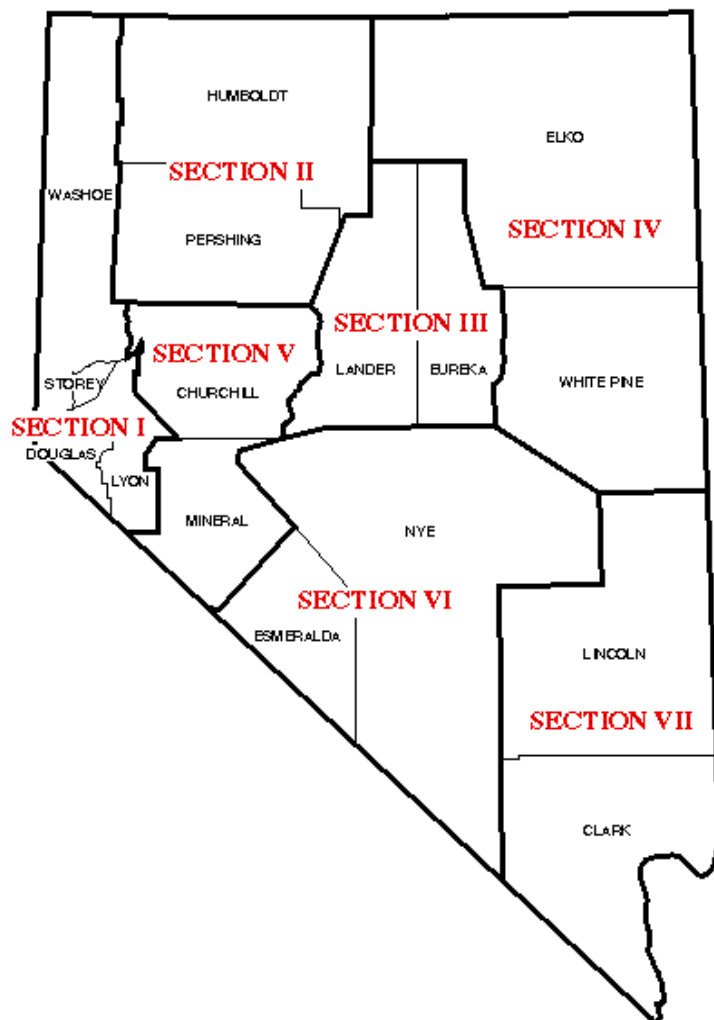
Linda Wells, *Program Assistant, Oil, Gas and Geothermal*

Wanda Martin, *Accounting Specialist*

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Dina Carrion, *Program Assistant, Abandoned Mine Lands*

George Bishop, *Administrative Aid*



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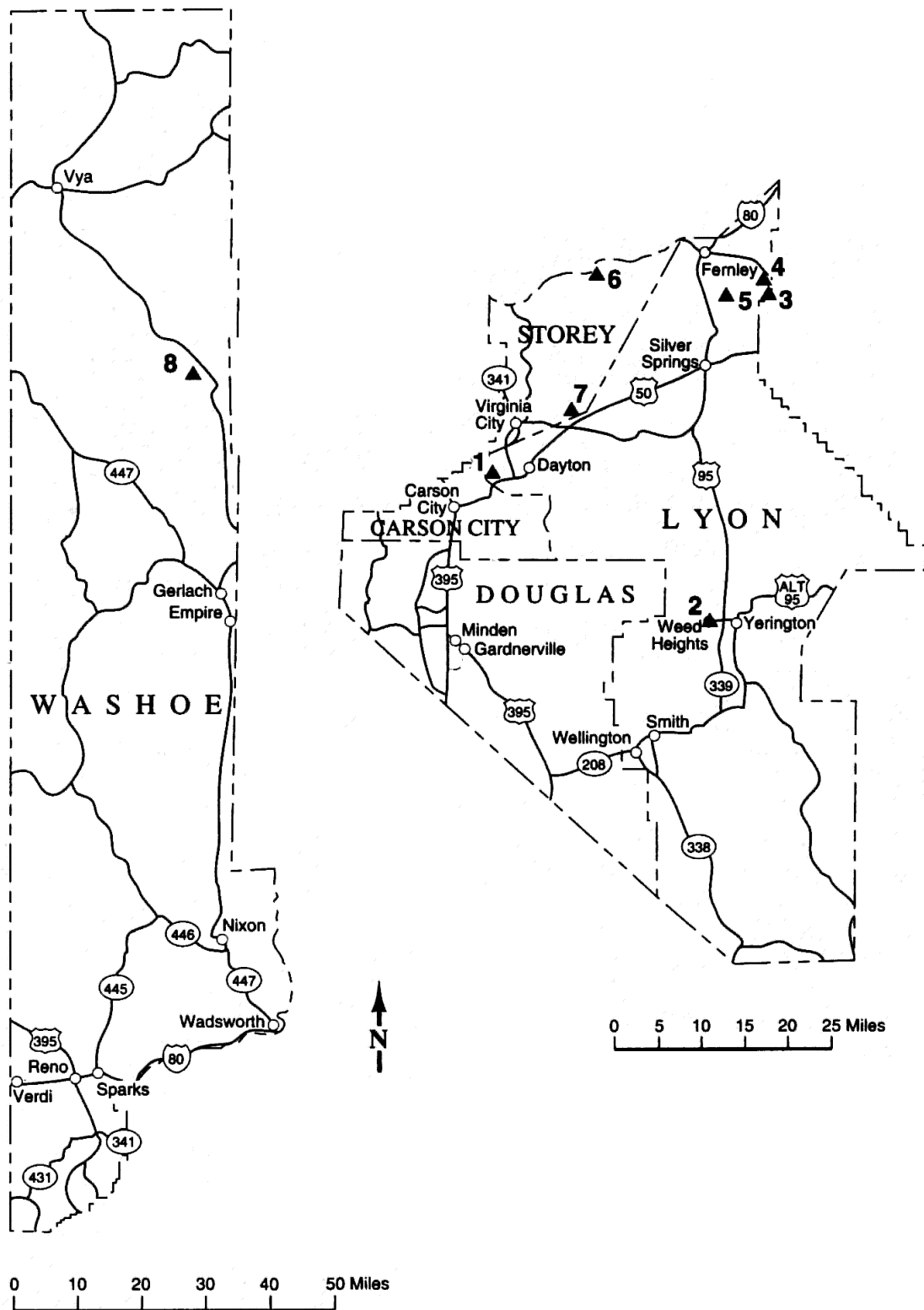
Summary of 1994 Production

MINERAL INDUSTRIES IN NEVADA'S
ECONOMY - 1994

MAJOR MINES, OIL FIELDS, AND
GEOTHERMAL PLANTS, 1994 (map)

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SECTION I - Lyon, Storey, and Washoe



SECTION I - Lyon, Storey, and Washoe

Lyon County

Adams Claim Gypsum Mine (1)

Operator:

Art Wilson Co.
P.O. Box 1160
Carson City, NV 89701
702-882-0700 Fax:882-0790
Company employees: 44

Production:

Gypsum

Arimetco/Copper Tek (2)

Operator:

Arimetco, Inc.
102 Burch Drive
Yerington, NV 89447
702-463-3125 Fax:463-3127
Company employees: 73

Production:

Copper - 10,000,000 pounds

CR Minerals Mine (3)

Operator:

CR Minerals Corp.
P.O. Box 455
Fernley, NV 89408
702-575-2536 Fax:575-4857
Company employees: 15

Production:

Diatomite

Hazen Pit (4)

Operator:

Eagle-Picher Minerals, Inc.
P.O. Box 10480
Reno, NV 89510
702-343-1818 Fax:343-1821

Production:

Diatomite

NCC Limestone Quarry (5)

Operator:

Nevada Cement Co.
P.O. Box 840
Fernley, NV 89408
702-575-2281 Fax:575-4387
Company employees: 150

Production:

Limestone/Clay

Storey County

Clark Mine and Mill (6)

Operator:

Eagle-Picher Minerals, Inc.
P.O. Box 10480
Reno, NV 89510
702-343-1818 Fax:343-1821
Company employees: 62

Production:

Diatomite

Golden Eagle Mine (7)

Operator:

American Eagle Resources, Inc.
P.O. Box 859
Virginia City, NV 89440
702-246-0761 Fax: 246-3117
Company employees: 21

Production:

Gold - 5,000 oz
Silver - 41,000 oz

Washoe County

Western Hog Ranch Mine (8)

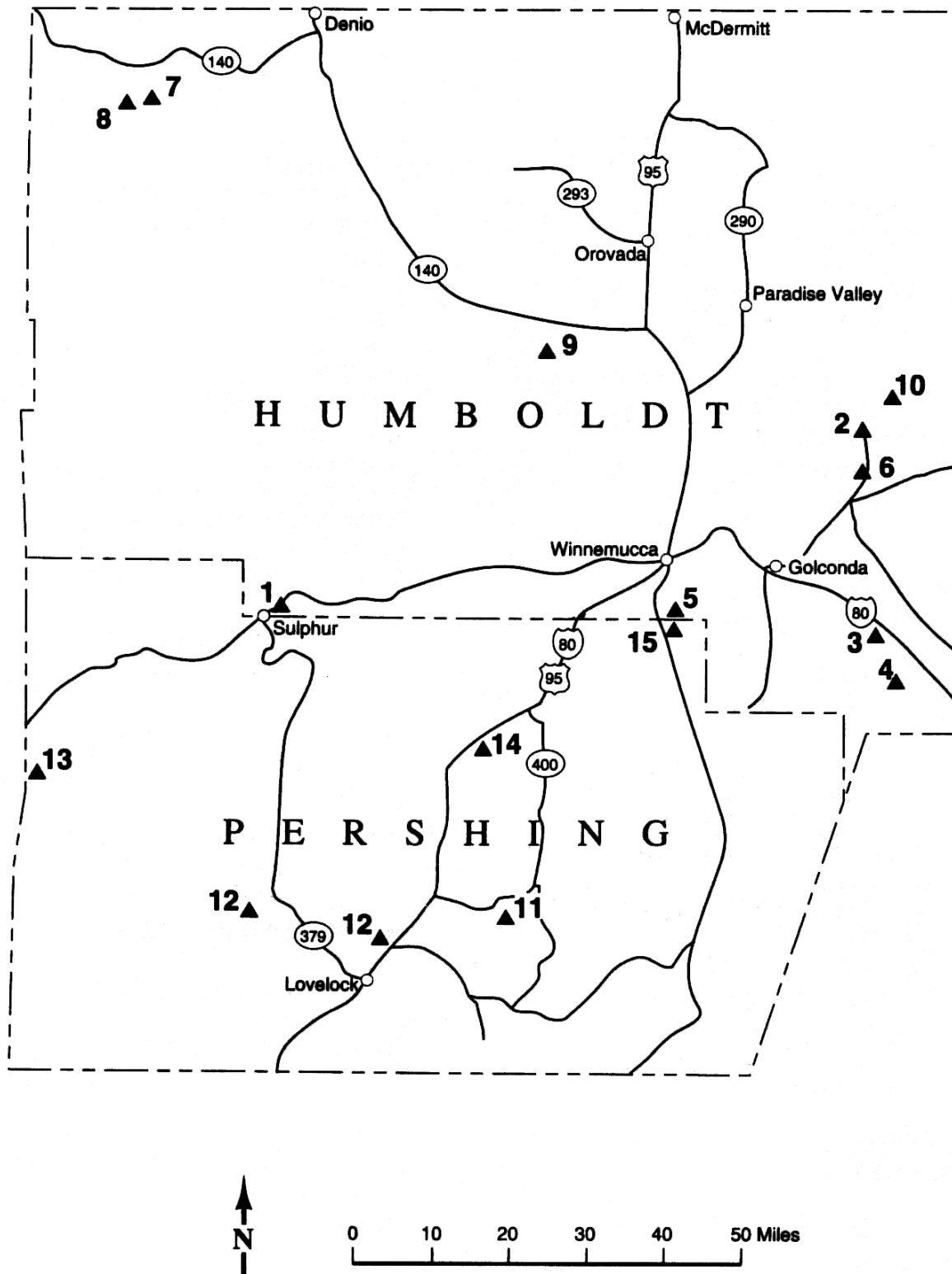
Operator:

Western Mining Corp. USA
P.O. Box 9
Gerlach, NV 89412
702-557-2345 Fax:557-2535
Company employees: 13
Contract employees: 10

Production:

Gold - 7,000 oz
Silver - 2,000 oz

Section II - Humboldt and Pershing



Section II - Humboldt and Pershing

Humboldt County

Crofoot/Lewis Mine (1)

Operator:
Hycroft Resources & Dev., Inc.
P.O. Box 3030
Winnemucca, NV 89446
702-623-5260 Fax:625-0215
Company employees: 247
Production:
Gold - 94,500 oz
Silver - 297,000 oz

Getchell Mine (2)

Operator:
FirstMiss Gold Inc.
P.O. Box 220
Golconda, NV 89414
702-635-5001 Fax:529-0447
Company employees: 208
Contract employees: 80
Production:
Gold - 230,000 oz
Silver - 57,000 oz

Lone Tree Mine (3)

Operator:
Santa Fe Pacific Gold Corp.
P.O. Box 388
Valmy, NV 89438
702-635-9000 Fax:635-0111
Company employees: 325
Production:
Gold - 226,911 oz

Marigold Mine (4)

Operator:
Rayrock Mines, Inc.
P.O. Box 9
Valmy, NV 89438
702-623-2317 Fax:635-2551
Company employees: 104
Production:
Gold - 84,000 oz

MIN-AD Mine and Mill (5)

Operator:
MIN-AD, Inc.
4210 W. Jungo Road
Winnemucca, NV 89445
702-623-5944 Fax:623-9028
Company employees: 10
Production:
Specialty limestone - 46,000 tons

Pinson Mine (6)

Operator:
Rayrock Mines, Inc.
P.O. Box 129
Winnemucca, NV 89446
702-623-5036 Fax:623-5030
Company employees: 103
Production:
Gold - 44,000 oz
Silver - 3,500 oz

Rainbow Ridge (7)

Operator:
Rainbow Ridge Opal Mines, Inc.
P.O. Box 97
Denio, NV 89404
702-941-0270
Production:
Precious opal

Royal Peacock Opal Mine (8)

Operator:
Walter Wilson
P.O. Box 55
Denio, NV 89404
702-941-0374
Production:
Precious opal

Section II - Humboldt and Pershing

Sleeper Mine (9)

Operator:

AMAX Gold Inc.
600 Sod House Road
Winnemucca, NV 89445
702-623-1112 Fax:623-1115
Company employees: 170

Production:

Gold - 106,000 oz
Silver - 142,000 oz

Twin Creeks Mine (10)

Operator:

Santa Fe Pacific Gold Corp.
P.O. Box 69
Golconda, NV 89414
702-635-9400 Fax:635-4602
Company employees: 730

Production:

Gold - 502,000 oz
Silver - 245,000 oz

Pershing County

Coeur Rochester Mine (11)

Operator:

Coeur D'Alene Mines Corp.
P.O. Box 1057
Lovelock, NV 89419
702-273-7995 Fax:273-7050
Company employees: 309

Production:

Gold - 56,000 oz
Silver - 5,900,000 oz

Colado Mine and Plant (12)

Operator:

Eagle-Picher Minerals, Inc.
150 Coal Canyon Road
Lovelock, NV 89419
702-273-2636 Fax:273-7553
Company employees: 135

Production:

Diatomite

Empire Mine (13)

Operator:

United States Gypsum Co.
P.O. Box 130
Empire, NV 89405
702-557-2341 Fax:557-2212
Company employees: 130

Production:

Gypsum- 450,000 tons

Florida Canyon Mine (14)

Operator:

Florida Canyon Mining, Inc.
P.O. Box 330
Imlay, NV 89418
702-538-7300 Fax:538-7324
Company employees: 92
Contract employees: 108

Production:

Gold - 92,000 oz
Silver - 25,000 oz

Sexton Mine and Mill (15)

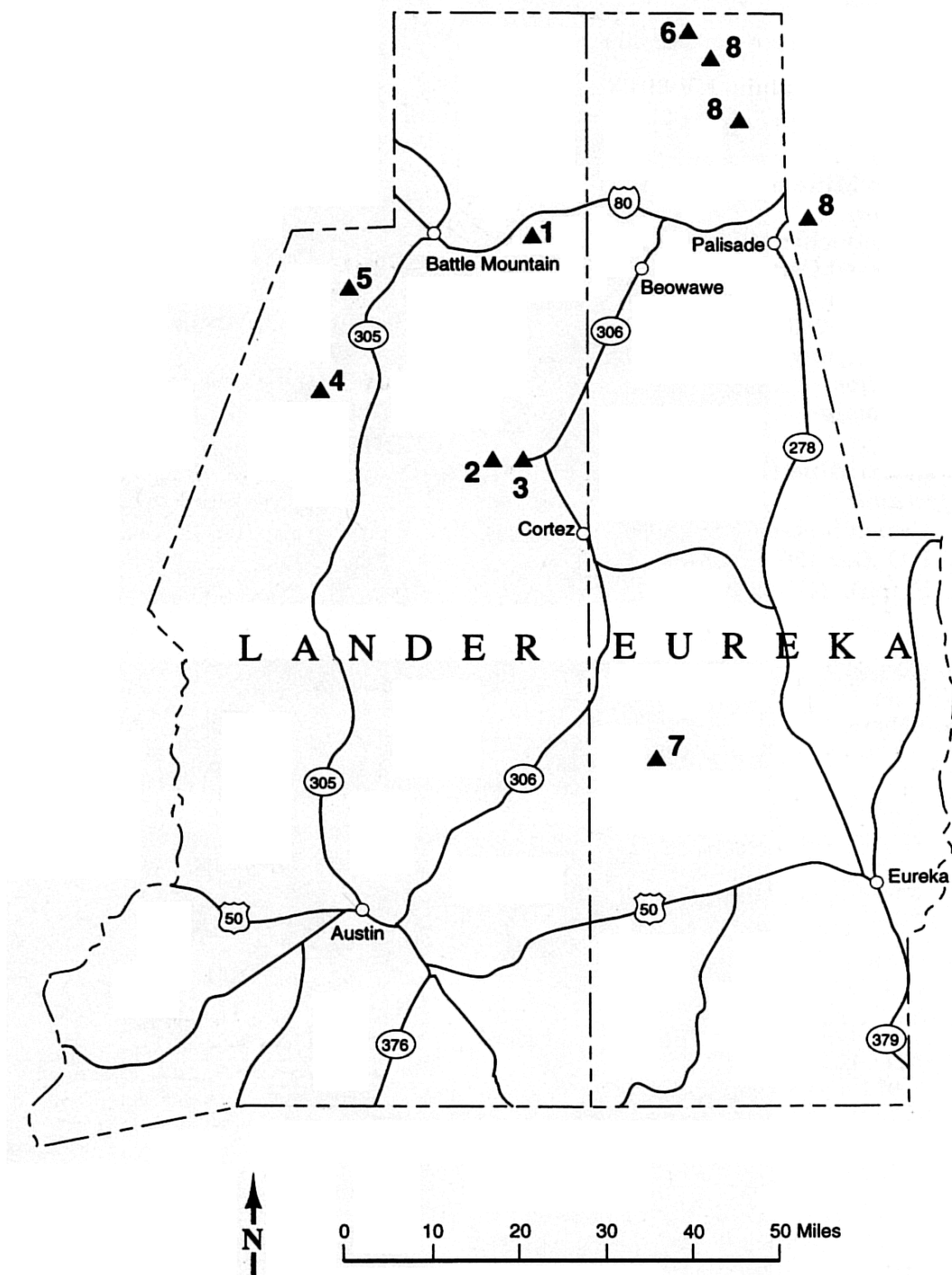
Operator:

W. Glen Sexton Family Trust
1230 Bridge Street
Winnemucca, NV 89445
702-623-3328
Company employees: 5

Production:

Dolomite

Section III - Eureka and Lander



Section III - Eureka and Lander

Lander County

Argenta Mine and Mill (1)

Operator:

Baker Hughes INTEQ
P.O. Box 277
Battle Mountain, NV 89820
702-635-5441 Fax:635-5455
Company employees: 14
Shipped:
Barite - 71,000 tons

**Battle Mountain Grinding Plant
(Greystone Mine) (2)**

Operator:

M-I Drilling Fluids Co.
P.O. Box 370
Battle Mountain, NV 89820
702-635-5135 Fax:635-2191
Shipped:
Barite - 90,000 tons

Cortez Gold Mines (3)

Operator:

Placer Dome U.S. Inc.
HC66-50
Beowawe, NV 89821
702-468-0505 Fax:468-0511
Company employees: 184
Production:
Gold - 69,000 oz
Silver - 8,000 oz

McCoy/Cove Mine (4)

Operator:

Echo Bay Minerals Co.
P.O. Box 1658
Battle Mountain, NV 89820
702-635-5500 Fax:635-5098
Production:
Gold - 359,000 oz
Silver - 10,440,000 oz

Reona Mine (Fortitude) (5)

Operator:

Battle Mountain Gold Co.
P.O. Box 1627
Battle Mountain, NV 89820
702-635-2465 Fax:635-8677
Company employees: 121
Production
Gold - 50,000 oz
Silver - 95,000 oz

Eureka County

Barrick-Goldstrike Mine (6)

Operator:

Barrick Gold Corp.
P.O. Box 29
Elko, NV 89803
702-738-8043 Fax:738-6543
Company employees: 1,500
Contract employees: 50
Production:
Gold - 1,849,000 oz

Gold Bar Mine (7)

Operator:

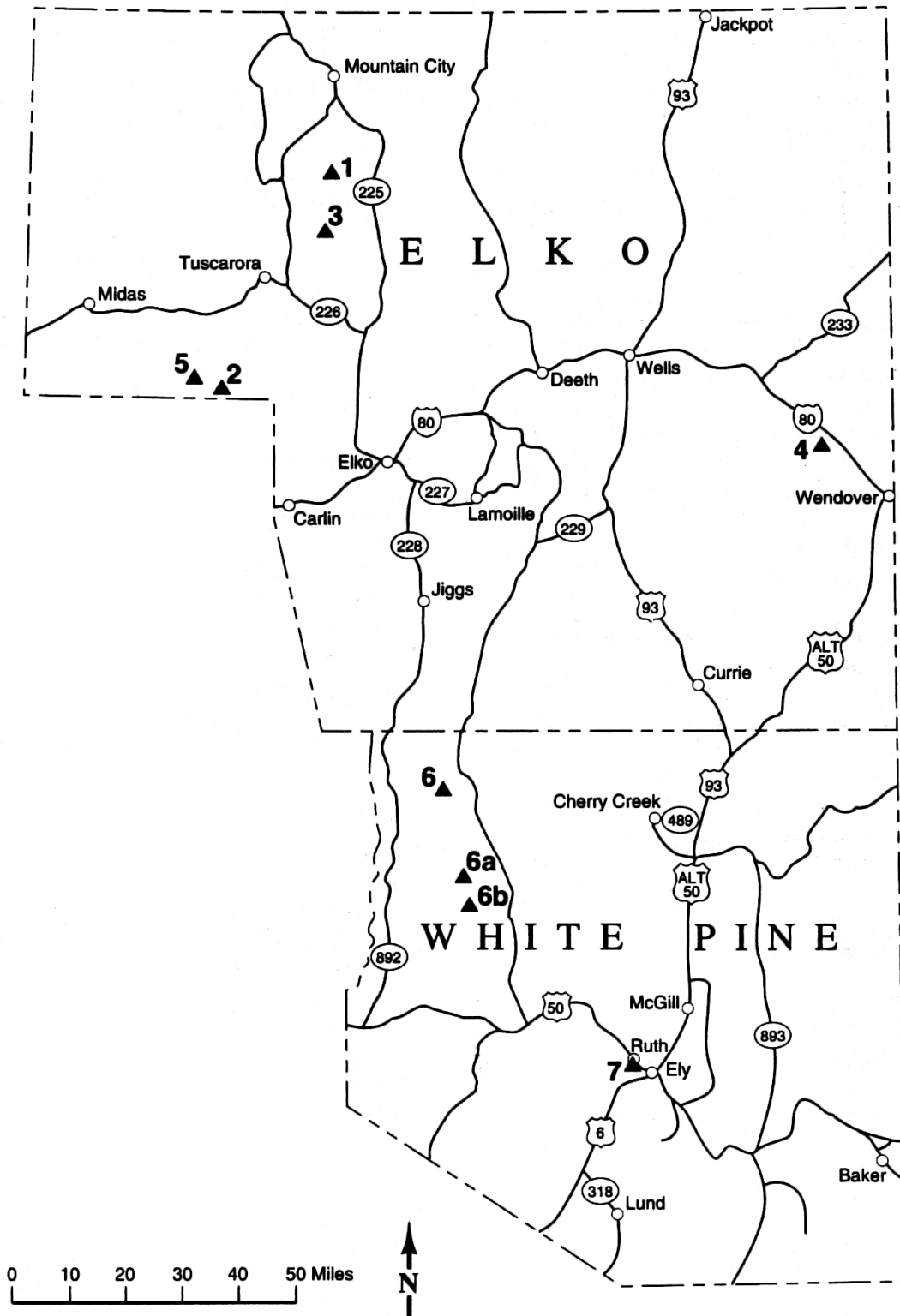
Atlas Gold Mining Inc.
P.O. Box 282
Eureka, NV 89316
702-237-5621 Fax:237-5703
Production:
Gold - 20,000 oz

Newmont Gold Operations (8)

Operator:

Newmont Gold Co.
P.O. Box 669
Carlin, NV 89822
702-778-4000 Fax:778-4754
Company employees: 2,000
Contract employees:1,800
Production:
Gold -1,554,000 oz
Silver -158,000 oz

Section IV - Elko and White Pine



Section IV - Elko and White Pine

Elko County

Big Springs Project (1)

Operator:

Independence Mining Co., Inc.

HC31 Box 78

Elko, NV 89801

702-758-9221 Fax:758-9231

Company employees: 37

Production:

Gold - 28,000 oz

Dee Gold Mine (2)

Operator:

Rayrock Mines, Inc.

P.O. Box 1193

Elko, NV 89803

702-738-6440 Fax:738-6520

Company employees: 65

Production:

Gold - 24,000 oz

Jerritt Canyon Joint Venture (3)

Operator:

Independence Mining Co., Inc.

HC31 Box 78

Elko, NV 89801

702-758-9221 Fax:758-9231

Company employees: 649

Production:

Gold - 328,000 oz

Pilot Peak Lime Plant (4)

Operator:

Continental Lime Inc.

P.O. Box 2520

Wendover, NV 89883

702-478-5463 Fax:478-5149

Company employees: 27

Production:

Limestone

Rossi Mine (5)

Operator:

Baroid Drilling Fluids

P.O. Box 340

Battle Mountain, NV 89820

702-468-0515 Fax:468-2060

Product:

Barite

White Pine County

Bald Mountain Mine (6)

Operator:

Placer Dome U.S. Inc.

P.O. Box 2706

Elko, NV 89801

702-744-4227 Fax:744-4216

Company employees: 210

Production (includes Alligator Ridge [6a] and

Yankee [6b] Projects):

Gold - 120,000 oz

Robinson Mine (7)

Operator:

Magma Nevada Mining Co.

P.O. Box 382

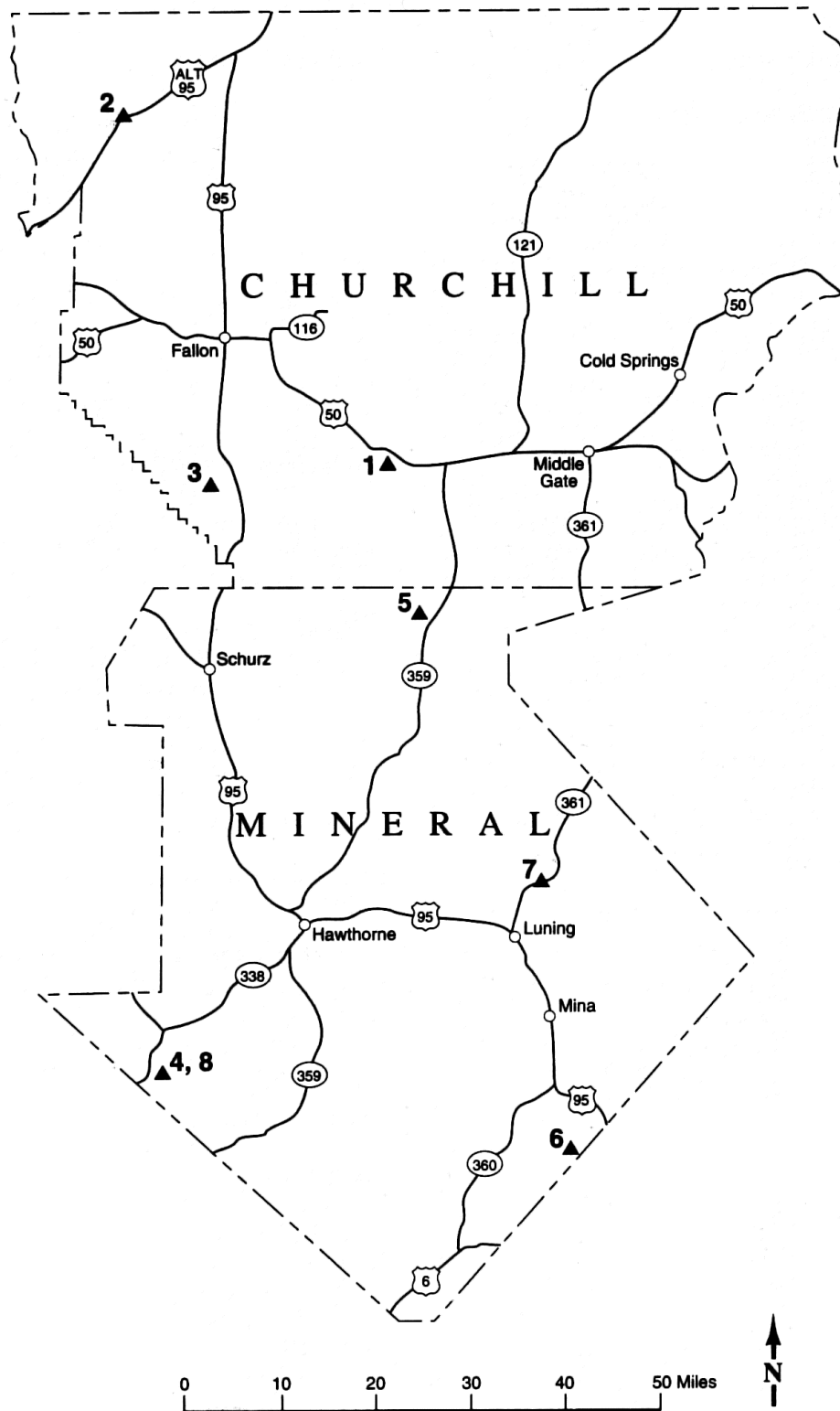
Ruth, NV 89319

702-289-7000 Fax:289-7102

Production:

Copper/Gold

Section V - Churchill and Mineral



Section V - Churchill and Mineral

Churchill County

Huck Salt (1)

Operator:

John Huckaby and Sons
5033 Austin Hwy.
Fallon, NV 89406
702-423-2055

Company employees: 3

Production:

Salt - 19,000 tons

Moltan Mine (2)

Operator:

B.J. Gurley
P.O. Box 860
Fernley, NV 89408
702-786-5666 Fax:786-6027

Company employees: 55

Production:

Diatomite

Popcorn Mine (3)

Operator:

Eagle-Picher Minerals, Inc.
P.O. Box 10480
Reno, NV 89510
702-343-1818 Fax:343-1821

Company employees: 2

Production:

Perlite

Mineral County

Aurora Mine (4)

Operator:

Nevada Goldfields, Inc.
P.O. Box 3070
Hawthorne, NV 89415
702-945-3368 Fax:945-3360

Company employees: 45

Production:

Gold/Silver

Denton-Rawhide Mine (5)

Operator:

Kennecott Rawhide Mining Co.
P.O. Box 2070
Fallon, NV 89407
702-423-1394 Fax:322-7006
Company employees: 165

Production:

Gold - 118,000 oz
Silver - 952,000 oz

Kinross-Candelaria Mine (6)

Operator:

Kinross Gold U.S.A. Inc.
P.O. Box 1240
Hawthorne, NV 89415
702-573-2471 Fax:573-2520

Company employees: 45

Contract employees: 90

Production:

Silver - 3,190,000 oz
Gold - 12,800 oz

Santa Fe Mine (7)

Operator:

Corona Gold, Inc.
P.O. Box 3220
Hawthorne, NV 89415
702-945-3610 Fax:945-2046

Company employees: 14

Production:

Gold - 22,000 oz
Silver - 28,000 oz

The Aurora Partnership (8)

Operator:

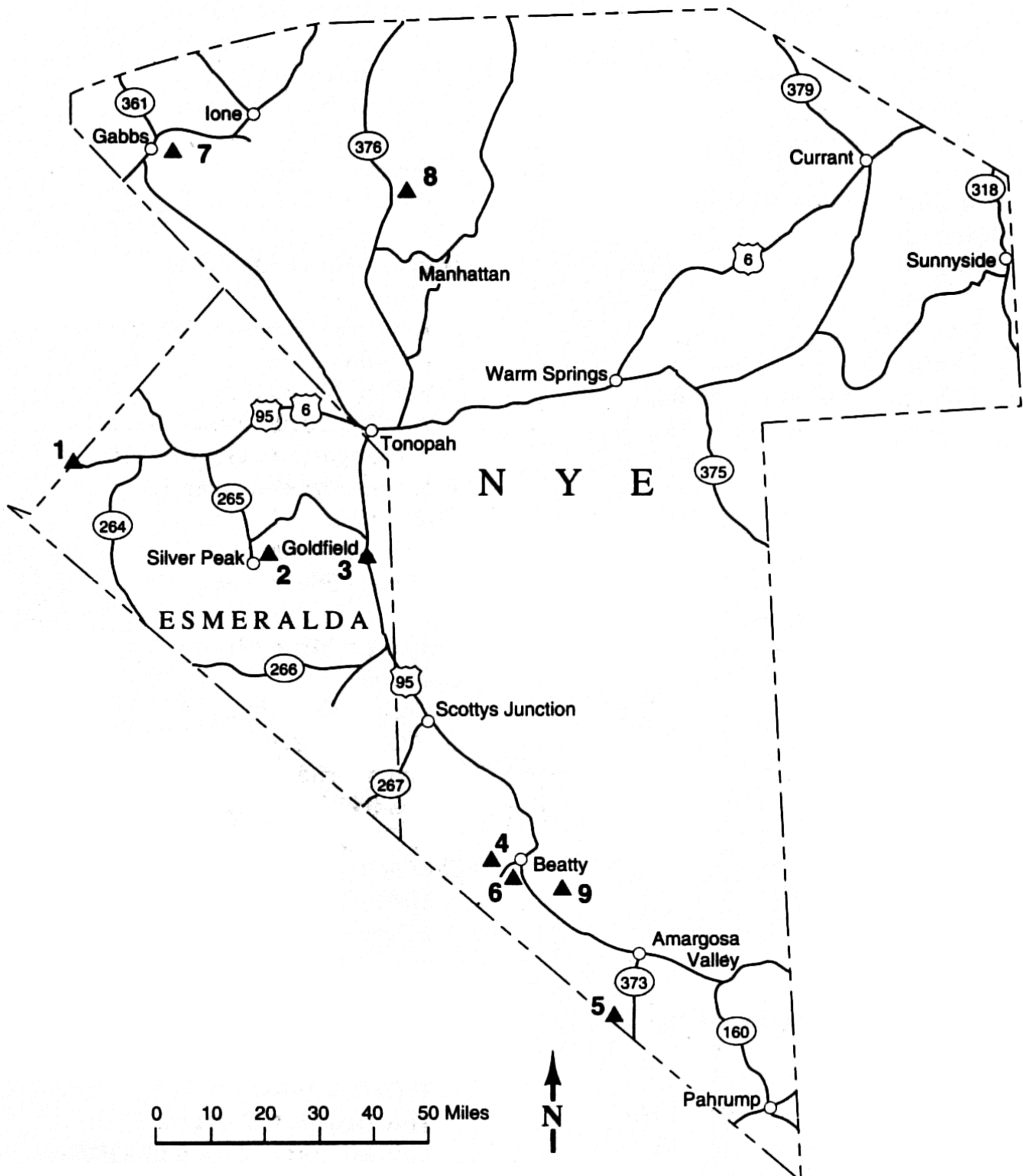
Electra Mining Corp.
P.O. Box 1628
Hawthorne, NV 89415
702-945-3341 Fax:945-3162

Company employees: 14

Production:

Gold - 30,000 oz
Silver - 57,000 oz

Section VI - Esmeralda and Nye



Section VI - Esmeralda and Nye

Esmeralda County

Basalt Mine and Mill (1)

Operator:

Grefco, Inc.
P.O. Box 288
Mina, NV 89422
Dicalite Toll Station #1
Fax: 619-872-6006
Company employees: 6

Production:

Diatomite

Cyprus-Silver Peak (2)

Operator:

Cyprus Foote Mineral Co.
P.O. Box 98
Silver Peak, NV 89047
702-937-2222 Fax:937-2250
Company employees: 54
Contract employees:16

Production:

Lithium carbonate

Goldfield Operation (3)

Operator:

American Pacific Minerals, Ltd.
P.O. Box 160
Goldfield, NV 89013
702-485-3218 Fax:485-3268

Production:

Gold

Nye County

Barrick-Bullfrog Mine (4)

Operator:

Barrick Gold Corp.
P.O. Box 519
Beatty, NV 89003
702-553-2900 Fax:553-2963
Company employees: 240
Contract employees: 50

Production:

Gold- 301,000 oz
Silver - 410,000 oz

IMV Division of Floridin (5)

Operator:

Floridin Co.
Route Box 549
Amargosa Valley, NV 89020
702-372-5341 Fax:372-5640
Company employees: 37

Production:

Specialty clays - 27,000 tons

New Discovery Mine and Mill (6)

Operator:

Vanderbilt Minerals Corp.
2320 Viking Road
Las Vegas, NV 89109
702-732-3174
Company employees: 6

Production:

Specialty clay

Premier (7)

Operator:

Premier Services Corp.
P.O. Box 177
Gabbs, NV 89409
702-285-2601 Fax:285-4021
Company employees: 77

Production:

Magnesium oxide

Round Mountain Mine (8)

Operator:

Smoky Valley Common Operation
P.O. Box 480
Round Mountain, NV 89045
702-377-2366 Fax:377-3240
Company employees: 530

Production (preliminary):

Gold - 423,000 oz
Silver - 268,000 oz

Section VI - Esmeralda and Nye

Sterling Mine (9)

Operator:

Saga Exploration Co.

P.O. Box 187

Beatty, NV 89003

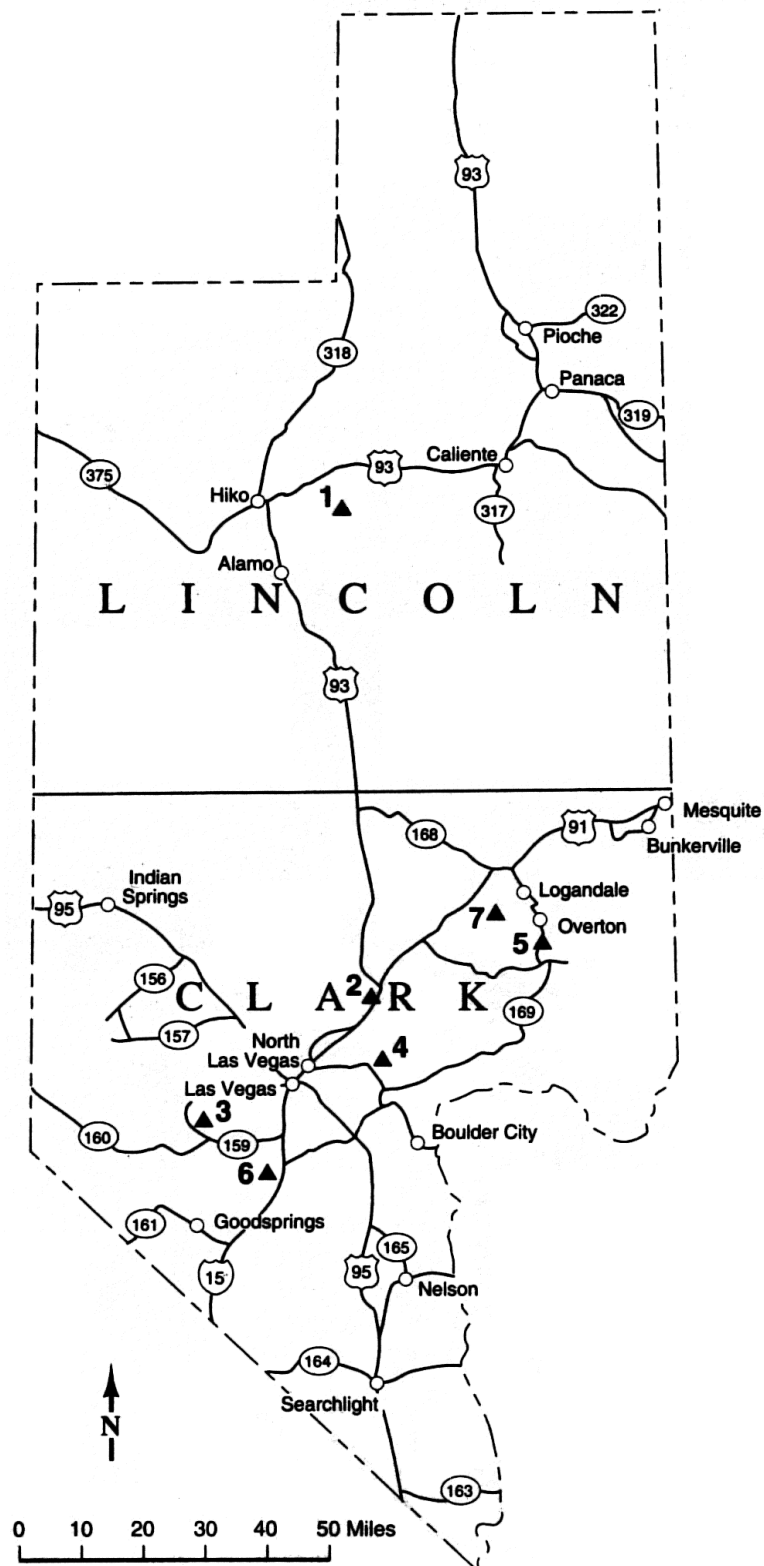
702-221-6140 Fax:372-9770

Company employees: 42

Production:

Gold, silver

Section VII - Clark and Lincoln



Section VII - Clark and Lincoln

Lincoln County

Mackie Perlite Mine (1)

Operator:
Wilkin Mining & Trucking Co.
P.O. Box 472
Panaca, NV 89042
702-728-4443 Fax:728-4441
Company employees: 5
Production:
Perlite

Clark County

Apex Mine and Plant (2)

Operator:
Chemical Lime Co.
P.O. Box 3609
North Las Vegas, NV 89036
702-643-7702 Fax:643-9517
Company employees: 50
Production:
Limestone

Blue Diamond Mine (3)

Operator:
James Hardie Gypsum (NV) Inc.
HCR 89033, Box 2900
Las Vegas, NV 89124
702-875-4111 Fax:875-4213
Company employees: 103
Production:
Gypsum - 430,000 tons

PABCO Gypsum (4)

Operator:
Pacific Coast Building Products, Inc.
1973 N. Nellis Blvd. #328
Las Vegas, NV 89115
702-643-1016 Fax:643-6249
Company employees: 80
Contract employees: 2
Production:
Gypsum - 540,000 tons

Simplot Silica Products (5)

Operator:
Simplot Industries
1551 S. Moapa Valley Blvd.
Overton, NV 89040
702-397-2667 Fax:397-2798
Company employees: 43
Production:
Silica sand - 594,600 tons

Sloan Quarry (6)

Operator:
Chemical Lime Co.
P.O. Box 127
Henderson, NV 89015
702-565-8991 Fax:565-5902
Company employees: 53
Production:
Limestone

Weiser Quarry (7)

Operator:
Georgia-Pacific Corp.
P.O. Box 30006
North Las Vegas, NV 89036
702-378-8311 Fax:643-2049
Production:
Gypsum - 133,000 tons

**SUMMARY OF 1994 PRODUCTION OF
MINES LISTED IN THIS REPORT**

Gold	6,800,000 ounces
Silver	22,800,000 ounces
Barite (shipped)	400,000 tons
Copper	10,000,000 pounds
Diatomite	*
Dolomite	*
Gypsum	1,670,000 tons
Limestone	2,340,000 tons
Lithium carbonate	*
Magnesium oxide	*
Mercury	*
Perlite	5,700 tons
Precious opal	100 pounds
Salt	19,000 tons
Silica sand	595,000 tons
Specialty clay	90,000 tons

*Proprietary information.

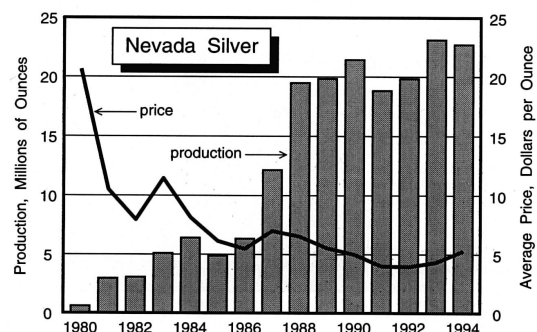
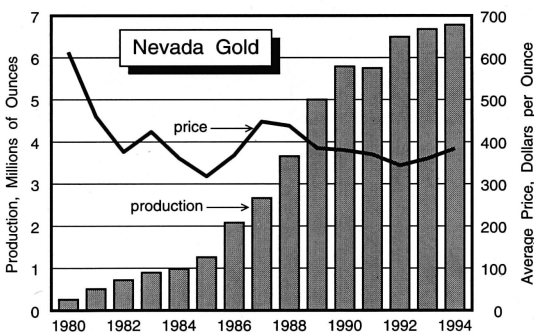
Mineral Industries in Nevada's Economy - 1994

By Russ Fields

Mining has always played an important role in the economy of Nevada, from the early days of the Comstock silver mines to today. The mineral industry in 1994 continued to make a major contribution to the economies of Nevada and the nation. Nevada, as it has for several years, led the nation in the production of gold, silver, and barite; was second in diatomite and lithium; and was the only producer of mined magnesite. Total nonfuel mineral production in Nevada in 1994 has an estimated value of over \$2.8 billion.

Gold has continued to be Nevada's most valuable mineral commodity. Gold production in 1994 reached 6.8 million troy ounces valued at \$2.61 billion, a new record for the state. Nevada produces over 60% of the gold mined in the United States and about 10% of world production. Nevada's gold reserves (resources in the ground that can be mined with reasonably foreseeable economics) are estimated at about 140 million ounces. At current production rates, that equates to an average life of more than 20 years for Nevada mining operations.

Nevada was the leading **silver** producer in the United States again in 1994 with a total production of 22.8 million troy ounces valued at over \$120 million.



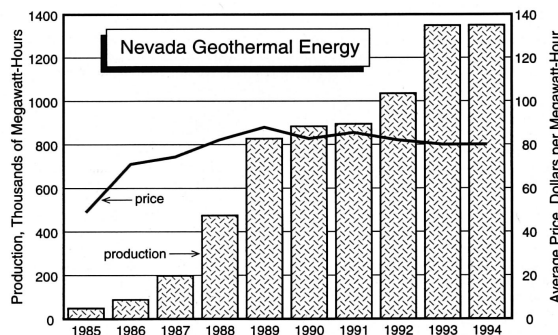
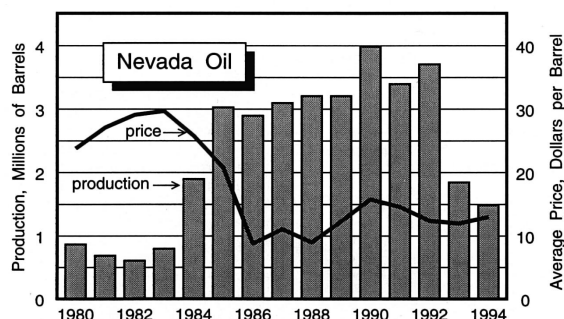
Base metals that are produced or have been produced in Nevada include: antimony, copper, lead, zinc, mercury, molybdenum, iron, and tungsten. There has been little exploration for base metals in Nevada during the past decade because of high production costs and low commodity prices. However, exploration for base metals increased in the early nineties as part of the renewed interest that mining companies are showing in redeveloping formerly active base metal mines. For example, Magma Nevada Mining Co, a major metal producer, has started mining copper in the Robinson district near fly, where copper was mined continuously from 1908 to 1978. Copper is also being produced near Yerington.

Industrial minerals, also an important part of Nevada's mineral industry and economy, provide raw materials for construction, fertilizers, medicines, and numerous other uses. Aggregates (sand, gravel, and crushed stone) are critical to the building requirements of the state's cities and towns and to the infrastructure of roads and airports. In manufacturing, industrial minerals are used as raw materials. As examples, magnesite is used to make refractory brick for use in the steel industry and by pharmaceutical companies to make milk of magnesia, a common laxative; plasterboard, commonly known as wallboard, is an important construction product manufactured from gypsum; and limestone, clay, and gypsum are used to make cement. Industrial minerals produced in Nevada include aggregate, barite, diatomite, gypsum, lime,

lithium carbonate, magnesium oxide, clay, perlite, salt, silica, and zeolites. In 1994, Nevada's mineral industry produced over 31 million tons of industrial minerals worth approximately \$300 million. There was increased production and dollar values of barite, cement, lime, gypsum, and silica.

Oil production in Nevada in 1994 was about 1.5 million barrels with a value estimated at \$19.5 million. The decline in oil production in 1993 and 1994 is due to the watering out of a significant amount of production from the Grant Canyon field in Railroad Valley. Grant Canyon had been the state's largest producing field since 1983, with daily production of over 8 thousand barrels at its peak and cumulative production of nearly 20 million barrels. While new producing wells have been drilled since Grant Canyon's decline, those wells have not been enough to offset the loss of Grant Canyon. Exploration drilling continues in the state and it is expected that new production will offset the loss of Grant Canyon within a few years. Nevada oil is used for the production of kerosene, diesel fuel, boiler fuel, and asphalt. In 1994, 14 new wells were drilled for oil and four of these became producing wells. No natural gas is commercially produced in the state.

Nevada is rich in **geothermal** resources, nationally second only to California in the production of electric power from geothermal energy. There are currently 12 plants at nine locations in the state with a total electric generating rated capacity of 208.6 megawatts. Total geothermal electrical energy sold in Nevada in 1994 was about 1,350,000 megawatt-hours with a value estimated at \$108 million. Geothermal heat is also used in a variety of commercial, domestic and public applications in Nevada. For example, schools in Elko County and homes and commercial buildings in Lincoln and Washoe Counties use geothermal heat. Mining, aquaculture, and agriculture also use geothermal resources.



In 1994, about 12,500 workers were employed in the Nevada mining industry. The average annual pay, the highest of any sector in the state, was about \$43,000, compared to the average salary in Nevada of about \$26,000 per year. In addition to the direct employment in mining, there are an estimated 36,000 jobs in the state related to providing goods and services needed by the industry.

Mining companies must pay taxes like any other business, but also pay an additional Nevada tax called the "Net Proceeds of Mines Tax." The total Net Proceeds tax paid in the state last year was approximately \$40 million. With the addition of sales and property tax, the industry paid approximately \$90 million in state and local taxes in 1994.

The economic impact of mining is important for the state as a whole but the greatest impacts are on the local communities near the mines. Towns like Elko, Lovelock, Battle Mountain, Winnemucca, Eureka, and Ely enjoy healthy economies because of the well-paid employees and the taxes and other contributions of the mining industry. For example, in 1991, Elko was named the "Best Small Town in America," by Norman Crampton in his book on small towns in the U.S. in recognition of its prosperity and quality of life.

The mines often impact these communities in ways that are difficult for local governments to deal with. Strains on schools, police, fire protection, and other public services are felt when new large mines open or undergo expansions. As a partial offset to these strains, many companies have provided donations of money, water systems, school buildings, buses, and other items to the communities near their mines. An example of these types of contributions is a pledge by Newmont Gold Co. and Barrick Gold Corp. to donate \$1,000,000 per year for five and a half years to the Elko County School District for construction needs.

Modern mining operations are required by state and federal laws to rehabilitate lands disturbed by mining. This process, called reclamation, is required to leave mined areas in a condition capable of supporting other beneficial uses. These uses can include wildlife habitat, livestock grazing, recreation, and new industrial uses. These post-mining uses also have a beneficial economic impact on the communities near the mine sites and on the state.

For more complete coverage of mining activities and mineral resources of Nevada, see The Nevada Mineral Industry 1994 (NBMG Special Publication MI-1994), planned for publication July 1995. **

Minerals and Society

Why do we need minerals? This seems like a silly question, but when we begin to think about all of the uses for minerals, we find the question to be more complicated than we first thought.

According to the U.S. Bureau of Mines, it is now necessary to produce 40,000 pounds of new minerals each year for each American. Advances in technology and improvement in living standards increase the demand for minerals.

Imagine yourself living in Nevada's fastest growing area, the Las Vegas Valley, and working as a marketing director for a major hotel/casino.

Now, as you go through a typical day, let's look at some mineral products that affect all of our lives. As you get out of bed in the morning, your feet hit the carpet (carpet fibers are made of petroleum products and calcium carbonate (limestone) is used in the carpet backing). You flip on the light in the kitchen (the light is made entirely of minerals: silica, limestone, talc, lithium, borates, soda ash, feldspar, copper, zinc, lead, tungsten, and more).

The linoleum on your kitchen floor contains calcium carbonate, clay, and wollastonite. Your breakfast roll contains salt and a minor amount of gypsum and your plate is likely made of ceramic clays. Other common items in your house that are made from mineral products: toothpaste (limestone, sodium carbonate); sinks, toilets, and bathtubs (ceramic clays, borosilicate glasses); cleansers (silica, pumice, diatomite, feldspar, limestone); walls (gypsum); and roofing (borates, asphalt, silica sand).

You walk out to your car and, on the way, you see that the automatic sprinkler system is watering your lawn (the plastic pipe in the sprinkler system is made from petroleum products; the lawn fertilizers contain potash, phosphates, nitrogen, sulfur, and other minerals).

Your car is almost completely made of mineral products. Tires contain clays, barite, and calcium carbonate. The glass is made from silica and various other industrial minerals. Plastics are made from petroleum products, calcium carbonate, wollastonite, mica, talc, clay, and silica. Metals in the car include iron, copper, lead, zinc, aluminum, gold, and silver (in the electronic systems), platinum (in the catalytic converter), tungsten, and molybdenum. The oils, greases, and fuel are all derived from petroleum and have additives such as molybdenum, lithium, boron, and lead. The paint is made from calcium carbonate, mica, talc, silica, wollastonite, and other industrial minerals.

You pull off your cement driveway (calcium carbonate, gypsum, clay, sand, and gravel) onto the paved street (asphalt, aggregates) for your drive to work.

You arrive at your office on the second floor of a fabulous modern hotel/casino. The huge building is virtually made of minerals.

The Excalibur Hotel and Casino located at 3850 S. Las Vegas Boulevard required an estimated three-quarters of a billion pounds (750,000,000) or 375,000 tons of mineral products to build. Estimates of contractor supplied materials include:

- 2,000 tons of rhyolite**
- 120,000 cubic yards of concrete made of:**
 - 180,000 tons of aggregate**
 - 39,000 tons of cement**
 - 10,000 tons of sand and gravel**
- 8,500 cubic yards of mortar made of:**
 - 10,200 tons of sand**
 - 2,400 tons of cement**
- 128 tons of stucco stone made from lightweight aggregate and cement**
- 14 tons of aluminum window frames**
- 4,024 windows containing of 192 tons of silica**
- 4 million blocks made of sand, clay, and stone weighing more than 84,000 tons**
- 8,500 tons of structural steel**
- 1,640 tons of roof ballast gravel**
- 6,375 tons of wallboard (gypsum)**

Many of the industrial minerals—the sand, aggregate, rhyolite, and gypsum—were mined in the vicinity of Las Vegas.

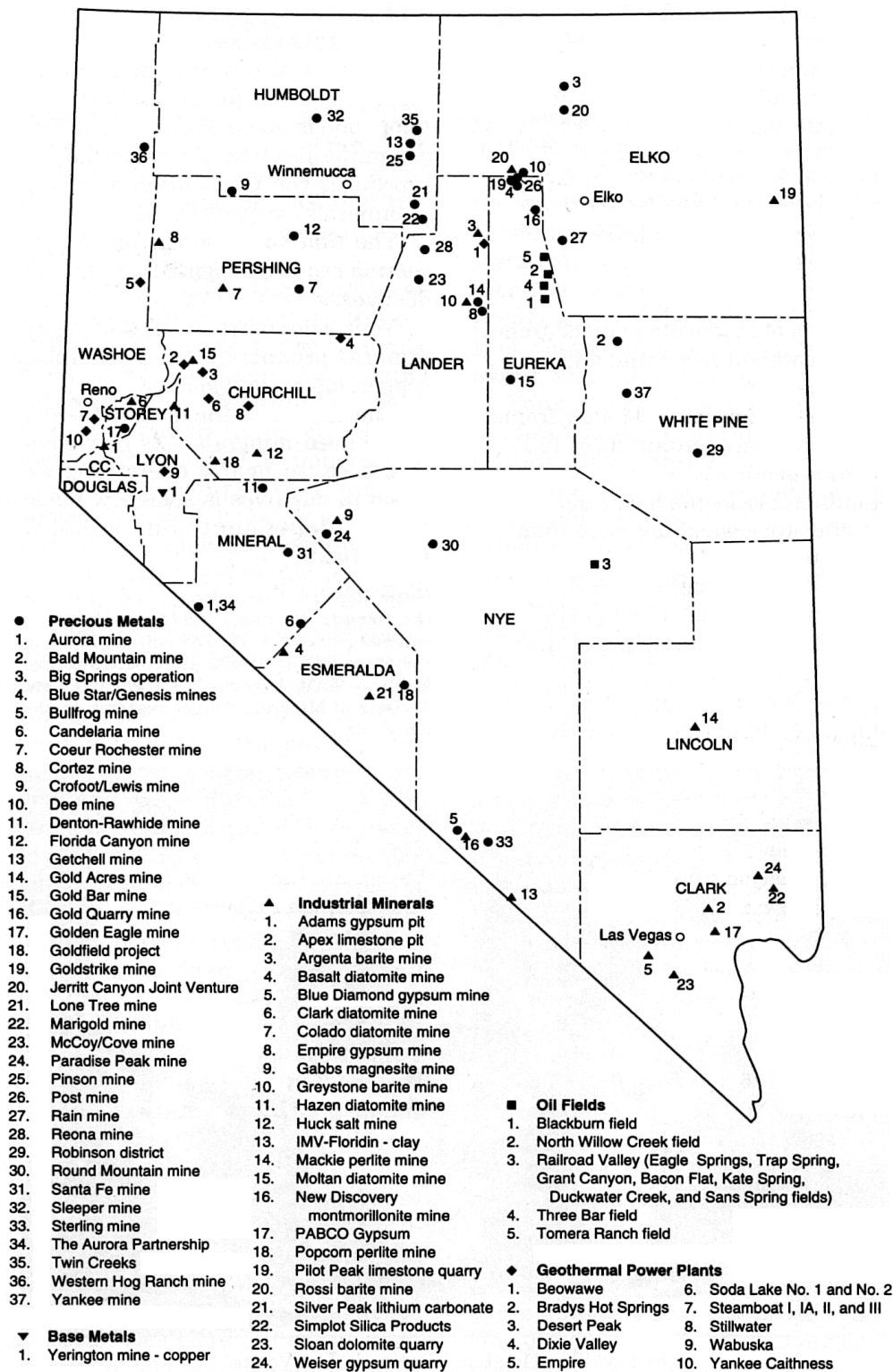
Your work requires nearly constant use of the telephone (a typical telephone is made of about 40 different minerals). The glossy marketing brochures you use contain a variety of minerals—especially clays.

The film you use and photo processing require a significant amount of silver.

Your computers are full of many mineral products, including silica, copper, silver, and gold.

The answer to the question—why do we need minerals?—is now obvious: because nearly everything we touch in our lives is somehow made of or dependent on mineral resources.

Note: Reprinted from *Mineral Industries in the Nevada Economy, 1991, NBMG Educational Series No. 12, 2nd edition*. Many of the ideas in this article are credited to Hal McVey. Walt Lombardo of the Nevada Division of Minerals did the research on the Excalibur.



Major Mines, Oil Fields, and Geothermal Plants 1994

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Adams Claim gypsum mine
Apex quarry and plant
Argenta mine and mill
Arimetco/Copper Tek
Aurora mine
Bald Mountain mine
Barrick-Bullfrog mine
Barrick-Goldstrike mine
Basalt mine and mill
Battle Mountain grinding plant
Big Springs project
Blue Diamond mine
Clark mine and mill
Coeur Rochester mine
Colado mine and plant
Cortez Gold Mines
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Sexton mine and mill
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